

REMARKS

Claims 1-15 are pending in the application and the same are rejected. By this amendment, claim 1 is amended. Accordingly, claims 1-15 remain in the application and are presented for review and further consideration by the Examiner.

The Examiner has rejected claims 1, 2, 9, 13, and 15 under 35 U.S.C. §102(e) as being anticipated by Hamaski, U.S. Patent No. 5,990,952. (Examiner's Action, page 2, ¶ 3). The Examiner suggests that each input to the adding circuit 17 is a charge sensing node and that because charge detecting part 4 converts the charges from the CCD horizontal transfer register 3 to voltages, the inputs to the adding circuit 17 are for accumulating charge readable as a voltage. The Examiner further suggests that signal separating circuit 14 is a charge demultiplexor. (Examiner's Action, page 3).

Applicant respectfully disagrees.

Hamasaki discloses an image pickup device having sensor parts 1, CCD vertical transfer registers 2, a CCD horizontal transfer register 3, a charge detecting part 4, an output circuit 5, and an output terminal 6. The sensor parts 1 provide charge signals to the CCD vertical transfer registers 2. Each CCD vertical transfer register 2 provides the charge signals to the CCD horizontal transfer register 3. The CCD horizontal transfer register 3 transfers the charge signals to the charge detecting part 4. Charge detecting part 4 detects the signal charges from the CCD horizontal transfer register 3 and outputs them as signal voltages. The signal voltages pass through output circuit 5 and then are guided through output terminal 6. (Hamasaki, Fig. 1 and col. 3, line 60 – col. 4, line 20).

Hamasaki further discloses a signal processing circuit 12 having a sample-hold circuit 13, a signal separating circuit 14, a 1H delaying circuit 15, a clipping circuit 16, and an adding circuit 17. Sample-hold circuit 13 receives the signal voltages from output terminal 6 and sample-holds the voltage signal. The signal separating circuit 14 alternately separates and outputs the output voltage signal of the sample-hold circuit 13. The 1H delaying circuit 15 delays one of the output

voltage signals of the signal separating circuit 14. Clipping circuit 16 clips the delayed voltage signal. The adding circuit 17 adds the delayed and clipped voltage signal to the other output voltage signal of the signal separating circuit 14. (Hamasaki, Fig. 1 and col. 6, line 38 – line 49).

Since the inputs signals to the adding circuit 17 are both voltage signals, it is apparent that the inputs to the adding circuit 17 cannot be considered charge sensing nodes. In further support, Applicant's independent claims 1 and 9 specifically state that the charge sensing nodes accumulate charge. Since the input signals to the adding circuit 17 are both voltage signals, the inputs to the adding circuit 17 do not accumulate charge. Instead, they merely pass existing voltage signals to the adding circuit 17. Therefore, the inputs to adding circuit 17 do not disclose the charge sensing nodes of Applicant's independent claims 1 and 9.

Additionally, Applicant has amended independent claim 1 to more clearly describe that the charge is readable, from the charge sensing nodes, as a voltage. This is clearly not the case for the inputs to adding circuit 17. The inputs to the adding circuit 17 do not receive a charge signal, but receive a voltage signal. Since no charge signal is provided to the inputs to the adding circuit 17, charge is not readable, from the inputs to the adding circuits 17, as a voltage.

In contrast, Applicant's independent claims 1 and 9 include wording that the at least two charge sensing nodes accumulate charge. Claim 1, as amended, further elaborates that the charge is readable from each charge sensing node as a voltage. Hamasaki does not disclose at least two devices that accumulate charge either that is readable as a voltage from the device or that is output as a voltage.

Hamasaki does disclose the charge detecting part 4 accumulating charge, readable from the charge detecting part 4, as a voltage. However, Hamasaki discloses only one charge detecting part 4 and does not disclose a charge demultiplexor selectively, or sequentially, distributing charge from a charge shift register to the at least two charge detecting parts 4.

Furthermore, Hamasaki does not disclose a charge demultiplexor. The signal separating circuit 14 cannot be a charge demultiplexor, as it does not demultiplex charge. Rather, the signal separating circuit 14 demultiplexes voltage signals and is, therefore, a voltage demultiplexor. In further support, Applicant's independent claims 1, as amended, and 9 state that the charge demultiplexor is configured to distribute charge and Applicant's independent claim 1, as amended, states that the charge demultiplexor receives output charge. Since the signal separating circuit 14 of Hamasaki does not receive or distribute charge, the signal separating circuit 14 cannot be a charge demultiplexor.

In contrast, Applicant's independent claims 1, as amended, and 9 include wording that a charge demultiplexor is configured to distribute charge and Applicant's independent claim 1, as amended, states that the charge demultiplexor receives output charge. Hamasaki does not disclose a charge demultiplexor receiving or distributing charge.

The Examiner has rejected claims 5 and 12 under 35 U.S.C. §103(a) as being unpatentable over Hynecek, U.S. Patent No. 4,831,451. (Examiner's Action, page 4, ¶ 1).

Applicant respectfully disagrees.

The Examiner has rejected claims 3, 4, 6-11 and 14 under 35 U.S.C. §103(a) as being unpatentable over Hynecek in view of Tanji, U.S. Patent No. 5,883,667. (Examiner's Action, page 4, ¶ 2). As to Applicant's independent claim 6, the Examiner cites only Hamasaki and Tanji. The Examiner suggests that Hamasaki discloses outputting cell electrical charges to a charge demultiplexor and the charge demultiplexor selectively distributing the cell charges to one of at least two charge sensing nodes.

Applicant respectfully disagrees.

As discussed above, Hamasaki does not disclose either a charge demultiplexor or at least two charge sensing nodes. Therefore, Hamasaki does

not disclose either outputting cell electrical charges to a charge demultiplexor or a charge demultiplexor selectively distributing the cell charges to one of at least two charge sensing nodes.

In view of Applicant's arguments and amendments with respect to independent claims 1, 6, and 9 being allowable, Applicant respectfully submits that the remaining dependent claims are also allowable because they contain all of the limitations of their respective independent claims and further add structural and functional limitations.

The foregoing amendments and arguments are believed to be a complete response to the most recent Examiner's Action.

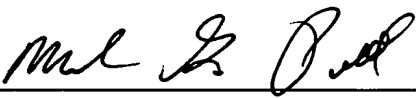
No new matter has been added.

It is respectfully submitted that there is no claim, teaching, motivation, or suggestion in any of the cited art, alone or in combination, to produce what Applicant claims.

It is further submitted that the application, as amended, defines patentable subject matter and that the claims are in a condition for allowance. Such allowance at an early date is respectfully requested.

Should any issues remain which would preclude the prompt disposition of this case, it is requested that the Examiner contact the undersigned practitioner by telephone.

Respectfully submitted,
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